A RESOURCE GUIDE FOR ADMINISTRATORS, EDUCATORS, AND PARENTS

A GUIDE TO ATTENTION DEFICIT/HYPERACTIVITY DISORDERS

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INTRODUCTION

- Tim is quick to react and always acts without thinking. He is continually active, talkative, and disruptive. He gets reprimanded by his teacher on countless occasions. His homework, when turned in, appears to be rushed with numerous careless errors. Tim's teacher knows he has the ability and finds him to be a very intelligent child, however, constant teacher reprimands have no impact on his behavior.

- Jennifer seldom listens to directions. If she begins a task, she is easily distracted by outside stimuli. She is redirected to tasks again and again, but she still drifts off course. She often talks outloud when she attempts to complete work assignments. Jennifer's teachers discovered that she excels when completing "hands on" activities. Her teachers maintain that Jennifer has the capability to perform at her educational grade level.

- Jackie always appears to be in another world. She rarely misbehaves; in fact, she is probably one of the better behaved children in the classroom. However, her work performance varies widely. On some assignments Jackie is right on target. At other times, even relatively easy assignments become difficult and contain many errors.

These observations on behavior all seem relatively normal. However, hyperactivity, distractibility, and impulsivity are all warning signs of a child with Attention Deficit/Hyperactivity Disorder (ADHD). Pervasive and persistent displays of this "type" of behavior compromise classroom work, and can typically lead to educational and social failure.

There is a wealth of literature regarding ADHD. However, even with plenty of information on ADHD, there is a considerable amount of confusion and controversy surrounding this disorder. Common questions exist such as: What is ADHD? What are the causes? What are effective treatments? Are medications effective? What is the long-term prognosis for children with ADHD? Since the mid-1980's, ADHD has been a national educational and research priority. Debates over the causes, diagnosis, and effective treatments for ADHD have been widely and vigorously contested.

Although a variety of causes have been proposed for ADHD, current thinking maintains that ADHD is a genetically transmitted central nervous system neurochemical disorder causing inattention, hyperactivity, and impulsivity. Moreover, ADHD is not something that can be cured. A child with ADHD typically does not

"outgrow" the symptoms. Instead, long-term treatment assists individuals in learning to compensate for the challenges presented by ADHD as they grow older.

The estimated incidence rate of ADHD varies widely. However, the generally accepted prevalence rate is approximately 3% - 5% of all school-age children. Given that most general education classrooms consist of approximately 25 students, this rate translates to at least one (1) student in every classroom. The prevalence rate is higher for males (with a 3:1 ratio of males to females). Many females with ADHD are undiagnosed. In addition, ADHD is not unique to a certain population; this disorder affects all socioeconomic levels and racial and cultural backgrounds.

Many individuals with ADHD lead very successful and productive lives. There is a high correlation between ADHD and poor academic outcomes and social failure. A large number of individuals with ADHD underachieve academically, drop out of school, engage in delinquent activities, and experience higher unemployment rates.

Family members and educational personnel have the opportunity to make a positive impact on the lives of children diagnosed with ADHD. Supportive family members and professionals have the opportunity to enhance the strengths of children with ADHD and develop the skills necessary for academic and social success. Early identification and treatment are essential in preventing a cycle of failure and low self esteem. Children with ADHD need encouragement, support, and educational survival skills to foster their self-concept and improve their academic performance.

This handbook is intended to serve as a comprehensive guide for students, parents, and school personnel who are interested in making a positive impact on the lives of children with ADHD. It compiles information on the historical perspective of ADHD, current research, and effective intervention strategies.

Purpose

The purpose of this handbook is to provide:

1. An historical perspective of ADHD;
2. A heightened awareness and understanding of the causes and symptoms of ADHD; and,
3. Exemplary practices that can be used to treat ADHD in the school, home, and community.

Note: *Readers should note that throughout this handbook the term Attention Deficit Hyperactivity Disorder (ADHD) is used to identify those individuals diagnosed with Attention Deficit*

Hyperactivity Disorder who fall into one of the three categories listed in the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV): ADHD Predominantly Inattentive Type, ADHD Hyperactive/Impulsive Type, and ADHD Combined Type.

OVERVIEW OF SUBSEQUENT SECTIONS

Section I provides an overview of the historical evolution of ADHD and significant milestone events that have contributed to the understanding and treatment of ADHD.

Section II provides a framework for understanding the etiology and symptoms of ADHD. This section describes the core behavioral characteristics associated with ADHD and other common developmental features of the disorder.

Section III summarizes the diagnostic criteria for ADHD and describes multiple evaluation mechanisms to collect information for a comprehensive assessment.

Section IV delineates the array of services that *may* be available for individuals diagnosed with ADHD. This section also describes the eligibility and entitlements of Section 504 of the Rehabilitation Act and the Individuals with Disabilities Education Act as it pertains to educational services.

Section V describes effective intervention strategies to enhance behavior control, academic performance, and social skills. These intervention strategies include positive reinforcement programs, environmental and instructional modifications, behavioral management techniques, social skills training, and parent/teacher training.

Section VI describes the use and efficacy of stimulant medication to treat ADHD. In addition, this section discusses specific medications and their side effects.

Section VII depicts future directions of ADHD research and identifies possible strategies that may lead to more successful outcomes for students exhibiting ADHD-related difficulties.

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SECTION I

AN HISTORICAL PERSPECTIVE OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER

Early references to symptoms of impulsivity, inattention, and hyperactivity in children date back to the eighteenth century. Many significant events have contributed to current understanding and treatment of ADHD. One of the earliest reports of ADHD symptoms was provided by Dr. George Frederick Still in 1902. Still described 20 children he had treated as "aggressive, defiant, and resistant to discipline." This combination of symptoms, later referred to as "Still's Disease," was thought to be the result of a defect in the child's "moral control" which was believed to be either inherited or caused by some sort of pre- or post-natal injury.

During the 1930s and 1940s, researchers maintained that restless, impulsive, inattentive, and excessive motoric behaviors were typically associated with or followed known neurologic trauma or disease. Therefore, it was reasoned that any child exhibiting this cluster of behaviors must have some neurological impairment. During this historical period it became commonplace to assume that children exhibiting hyperactivity suffered from mild brain damage, even in the absence of supporting neurological evidence. Further, it was during this time period that the stimulant medication (benezedrine) was first prescribed for hyperactive youth. Teachers reported drastic improvements in the behavior of students taking the stimulant medication.

Through the 1960s and 1970s the constellation of behavioral symptoms including inattentiveness, restlessness, and hyperactivity were often referred to as "minimal brain dysfunction." In 1961, ritalin was first used in the treatment of ADHD symptoms. In addition, in the 1960s, children exhibiting ADHD symptoms and learning problems were being referred to as having a specific learning disability. At the same time, children who exhibited primarily behavioral and conduct disorders were referred to as hyperactive. In 1968, the Diagnostic and Statistical Manual of Mental Disorders (DSM-II) adopted the term "hyperkinetic" in its formal diagnostic nomenclature. The DSM-II criteria for this diagnosis consisted of a brief description of the disorder, emphasizing behavioral overactivity, restlessness, distractibility, and short attention span. This disorder was thought to be developmental and, thus, would diminish in adolescence. However, by 1970 it was generally acknowledged that the behaviors associated with ADHD tend to be chronic, persisting into adolescence and often into adulthood.

The DSM-III published in 1980 changed the diagnostic classification to include two subtypes of attention deficit disorder based on the presence or absence of hyperactivity: ADD with hyperactivity and ADD without hyperactivity. In 1987 the DSM-III criteria were revised again. In DSM-IIIR, the subtyping of ADD into hyperactive and nonhyperactive categories was eliminated. The name of the disorder was changed to Attention-Deficit Hyperactivity Disorder (ADHD). Undifferentiated Attention Deficit Disorder (U-ADD) was the term used to identify children who exhibited a poor attention span but were not hyperactive or impulsive. Also, in 1987, the parent support group known as Children with Attention Deficit Disorder (CHADD) was founded.

The 1990s produced increased advocacy on behalf of children with ADHD and more changes in the diagnostic nomenclature. In 1990, CHADD and other disability advocacy organizations lobbied the U.S. Department of Education (DOE) to include ADHD as one of the designated disability categories eligible for special education services under the Individuals with Disabilities Education Act (IDEA). The U.S. Department of Education did not add ADHD as one of the IDEA eligibility categories. Instead, the DOE issued a joint memorandum clarifying

that children with ADHD could qualify for IDEA special education services under the existing eligibility categories of learning disability, emotional disturbance, or other health impaired. Further, the DOE memorandum indicated that schools must consider whether children with ADHD required any supportive services or accommodations according to the Rehabilitation Act of 1973. Finally, the new DSM-IV criteria categorized ADHD into three main sub-types: ADHD Predominately Inattentive Type, ADHD Predominantly Hyperactive/Impulsive Type, and ADHD Combined Type.

WIDESPREAD USE AND MISUSE OF THE ADHD DIAGNOSIS

In the past decade there has been a dramatic increase in the number of children diagnosed with ADHD. What is the cause of this increase? As with many other questions posed in this handbook, there are several plausible and debatable explanations.

Although a variety of causes have been proposed for ADHD and none can be considered conclusive, ample evidence exists documenting the constellation of behaviors associated with the ADHD label. While it is clear that ADHD exists, there continues to be much skepticism and criticism surrounding the misuse and overuse of the diagnosis. We do know that ADHD is currently the most common childhood disorder. Why? There are several reasons that illuminate the dramatic increase in the ADHD diagnosis. One reason relates to the increase in both the survival of extremely premature babies and in the number of fetuses exposed to substance abuse (Cherkes-Julowski, Sharp & Stolzenberg, 1997). Both conditions have been linked to an increased incidence of ADHD.

Another possible explanation for the increase in the incidence rate of ADHD points to the current legislative demand to elevate expectations and improve academic outcomes for all students. With demands for better academic results, teacher expectations of students increase to require more time on task, independent problem solving abilities, and self-motivational skills. A student exhibiting ADHD symptoms stands out and is poorly tolerated by this demanding school environment. Education professionals are more likely to seek a disability diagnosis in order to obtain support.

Enhanced public awareness and knowledge regarding ADHD has contributed to significant increases in the referral and diagnosis of children with ADHD. Since the 1980s, research in ADHD has experienced a great upsurge. The public is now inundated with a plethora of books, articles, and newsletters on ADHD. For example, in 1994, *Time* published a cover story regarding ADHD (*Driven to Distraction*) which raised consciousness about this disorder. In addition, the national ADHD support group, CHADD has rallied supporters and lobbied Congress to provide resources to ADHD. Further, more parents armed with the DSM IV criteria are seeking a medical diagnosis in an effort to secure appropriate educational services.

IS THE ADHD LABEL NECESSARY?

Labeling a student with ADHD provides a neutral term for families and educators to categorize the behaviors associated with ADHD. It provides a "name" for a constellation of behaviors and eliminates any tendencies to cast blame. While the label does not necessitate or dictate services, it does identify individuals who are at significant risk in their ability to handle life stresses and, thus, may trigger an earlier start to intervention services.

Although disability labels are necessary to secure funding and services, it must be remembered that simply knowing that a student has been diagnosed with ADHD does not dictate or predetermine services. No two individuals are the same, therefore concentrating on the label provides little benefit in the school setting. A significant amount of credible information can be obtained by capitalizing on the student's strengths and determining intervention strategies based on classroom observations.

SECTION II

WHAT IS ADHD AND WHAT CAUSES IT?

As previously stated, a number of causes for ADHD have been proposed, however, no single cause is considered the single conclusive cause of ADHD. The possible causes of ADHD can be grouped into five different classifications.

Heredity Causes (e.g. temperament, personality characteristics)

Genetic factors are believed to make the largest (approximately 80%) contribution to the incidence of ADHD (Barkley & Murphey, 1998). ADHD tends to run in families. That is, some children have a genetic predisposition to develop ADHD. Typically, a sibling, parent, grandparent, or other family member exhibited the same ADHD behaviors during their early childhood or adolescence. Research reveals that 25% of the fathers and 17% of the mothers of ADHD diagnosed individuals were previously diagnosed with the same disorder. In addition, having one child diagnosed with ADHD predicts a 35% likelihood of having another child diagnosed with the disorder (Barkley, 1990).

Biological/Physiological Causes

Many researchers describe ADHD as a central nervous system (CNS) deficiency in the neurotransmitters and genetic transmissions in the frontal lobe of the brain. A chemical imbalance or lack of brain chemicals (serotonin, dopamine, norepineprhine) which allows the release of extra neurotransmitters enabling a person to focus on tasks and block out extraneous stimuli causes the problems associated with ADHD.

Organic/Neurological (e.g. prenatal complications, exposure to alcohol)

Difficulties during pregnancy, severe birth complications, exposure to drugs and/or alcohol, premature delivery, low birth weight and pre/post natal injury have all been found to contribute (approximately 10-15%) to the risk of the disorder in varying degrees (Barkley, 1998).

Dietary or Allergic Issues (e.g. need for a restricted diet, sensitivity to sugar or food additives)

Some researchers contended that sugar and food additives contributed to hyperactivity and inattentiveness of many children. Consequently, the recommended intervention was a restricted diet. In 1983, the National Institute of Health (NIH) and their research scientists concluded that the restricted diet only assisted approximately 5% of children with ADHD. Current research has not given credence to this dietary theory of ADHD.

Other Medical Issues

Making the diagnosis of ADHD is very complicated because of the need to rule out other disorders or conditions. For example, children with ADHD are at greater risk for developing other co-occurring childhood conditions such as oppositional-defiant disorder, delinquency, substance abuse, and anxiety and mood disorders. Further, other medical conditions can resemble ADHD in symptoms including, but not limited to: Fetal Alcohol Syndrome, Tourette's Syndrome, sleep apnea, seizure disorders, and narcolepsy. Medications which treat these disorders and their side effects may also contribute to ADHD-like

symptoms.

WHAT DOES NOT CAUSE ADHD?

Research does not support the notion that ADHD is caused by factors such as poverty, family dysfunction, divorce, poor parenting skills, or chronic substance abuse. These factors may contribute or make the behaviors worse; however, they are unlikely to be the primary cause of ADHD. There is "...little if any evidence that supports the notion that ADHD children can arise purely out of social or environmental factors such as poverty, family chaos, diet, or poor management of children" (Barkley, 1990). Instead, a more appropriate perspective acknowledges there are environmental and situational factors that interact with a child's biological development which either exacerbate or ameliorate the child's behaviors. It serves no useful purpose to impose unfounded and unnecessary guilt on parents by blaming them for their children's behavioral problems.

DOES ADHD REALLY EXIST?

Although the behavioral symptoms associated with ADHD are clearly demonstrated by many children, there is a continuing professional debate on the concept of ADHD as a disorder. Some professionals maintain that ADHD is an internal biological-oriented disorder within the child. Others argue that ADHD should be viewed as a situation-specific disorder. That is, ADHD characteristics are apt to be more or less problematic depending on certain environmental factors. For example, situational factors such as a high noise level, rigid teacher behavioral expectations, excessive independent seat work, and abrupt classroom transitions typically have detrimental effects on the behavior of students with ADHD. In fact, some professionals contend that ADHD behaviors are the result of:

- a society that fosters a short attention-span in individuals,
- the response to a boring classroom situation, or
- simply a reflection of normal gender differences wherein boys tend to be more active than girls (Armstrong, 1990).

If a student's ADHD-related behavior is positively or negatively affected in interactions with certain teachers, in certain classroom environments, or during certain tasks, ADHD as a disorder may be best understood as a reflection of the degree to which there is a compatibility between aspects of the educational environment and characteristics of students with ADHD (Green, 1995). This is referred to in the professional literature as "goodness-of-fit". As an example, many students with ADHD experience a good fit with classroom environmental conditions that provide novel learning activities or lots of one-on-one attention to the student.

COMMON DEVELOPMENTAL FEATURES OF ADHD

Onset In Early Ages

One third of the children diagnosed with ADHD are described as "difficult" babies. Typically, these babies are

colicky, have difficulty eating and sleeping, and display an uneasy temperament (Hubbard, 1994).

The behaviors associated with ADHD appear to arise between 3 and 6 years of age, with the majority of individuals exhibiting the symptoms prior to age 13 (Barkley, 1990). This is not to say that the ADHD characteristics were non-existent prior to age 3. However, ADHD behaviors tend to be exacerbated by increased classroom environmental expectations for attention span, self-regulation, and independence.

By age 5, 95% of children with ADHD are either formally diagnosed or at least, largely recognized, as being difficult children (Hubbard, 1994). Children that are identified in later years (4th and 6th grades) are typically very bright children who have managed their school work until the work gets more difficult and the student's ability to attend deteriorates.

Chronic Problems Over Time

A long standing myth associated with ADHD is that the disorder eventually "disappears" or that children will eventually "outgrow" the disorder. Studies completed as early as the 1970s began to contradict this theory, proving that a large portion of individuals diagnosed with ADHD in childhood will continue to experience similar symptoms into adulthood. Research suggests that among those children clinically diagnosed with the disorder in childhood, 70% will continue to meet the criteria for diagnosis in adolescence and 30%-50% may continue into adulthood (Barkley & Murphey 1990).

Generally Pervasive Across Situations

Earlier diagnostic criteria required that children demonstrate ADHD symptoms in all situations. The current DSM-IV criteria require that the symptoms must be present in two or more settings (e.g., school, work, home). Although some individuals with ADHD tend to exhibit symptoms across most or all situations and environments, many individuals display ADHD symptoms under specific situations. As the earlier discussion on "goodness-of-fit" revealed, research has proven that even those students diagnosed with ADHD can perform better (not exhibit ADHD symptoms) in certain situations (e.g. provided one-to-one instruction, "hands-on" assignments, etc.). Barkley and his colleagues have identified situations which may determine response variability for students diagnosed with ADHD:

- The nature of the task and the frequency of the task instructions given throughout their performance;
- The novelty or unfamiliarity of a situation; and,
- The schedule of contingencies/reinforcement.

As discussed later in this resource guide, each of these environmental situations represents an effective strategy in educating children with ADHD.

WHAT ARE THE WARNING SIGNS/BEHAVIORS?

Teachers and parents are often the sources of concern over a child's behavior at home, in school, or in the community. Individuals impacted by a child's problem behaviors are interested in searching for:

- a cause of the behaviors,
- strategies to effectively deal with the behaviors, and
- a label to categorize the behaviors.

ADHD is a diagnosis applied to children and adults who consistently display the core characteristics of inattention, hyperactivity, and impulsivity. Barkley (1990) referred to these diagnostic characteristics as the "holy trinity" of ADHD.

What are the typical warning signs of ADHD? In other words, what are the symptoms associated with the disorder? The most common core ADHD symptoms identified by Barkley (1990) include poor sustained attention/vigilance, impulsive/poor delay of gratification, hyperactivity/poor regulated activity, diminished rule governed behavior, and increased variability of task performance.

Poor Sustained Attention/ Vigilance

Individuals diagnosed with ADHD tend to have difficulty concentrating on a task for extended periods of time. At times, sustained attention to a particular task becomes difficult, specifically in activities in which the student is bored or lacks interest. The academic consequence of poor attention is that the student shifts from one task to another, never completing an assignment, unless continually redirected.

The following behaviors are characteristic of an individual with poor attention/vigilance:

- easily distracted by outside stimuli,
- bored easily, specifically when completing a task of no interest,
- difficulty focusing/sustaining attention,
- tunes out - daydreams,
- difficulty working independently, and
- does not listen when spoken to directly.

Impulsive/Poor Delay of Gratification

Children or adults diagnosed with ADHD tend to be impatient. They frequently interrupt, blurt out answers, or act without thinking. They do dangerous things and do not consider the ramifications. They respond to immediate consequences and have difficulty attaining long-term goals. They will rush through a task to just "get by".

The following behaviors are characteristic of an individual who is impulsive:

- inability to stop and think before acting,
- blurting out during class,
- inability to wait for his/her turn,
- engaging in physically dangerous activities without thinking, and
- inability to wait for rewards.

Hyperactivity/Poor Regulated Activity

Approximately 70% of individuals diagnosed with ADHD are hyperactive. These individuals seem to never sit still; they are in constant motion.

The following are characteristics of an individual who is hyperactive:

- incessant movements,
- fidgetiness,
- distracted by/plays with nearby objects,
- excessive talking or habitual commenting/come-backs,
- difficulty remaining in seat - roams about,
- incessant tapping of fingers or objects,
- squirms and wriggles in seat, and
- difficulty engaging in quiet time or leisurely activities.

Diminished Rule Governed Behavior

Individuals with ADHD may lack an ability to follow rules which have been taught to them. This is not to be confused with a student's rebellion or refusal to complete a task (although, 40%-60% of individuals diagnosed with ADHD have a co-existing condition of Oppositional Defiant Disorder.) A student with diminished rule governed behavior is unable to follow instructions. A student may initially comply with the task instructions, but is eventually diverted by extraneous stimuli.

The following behaviors are characteristic of an individual with diminished rule governed behavior:

- inability to follow rules and multi-step instructions,
- difficulty listening or paying attention,
- overt display of attention seeking behaviors,
- destructive or overtly demonstrative behaviors,
- inability to demonstrate organizational tasks, and
- ineffective at self-starting/self-motivational activities.

Increased Variability of Task Performance

Students with ADHD tend to display extreme variation in their overall school performance and performance in home activities. Large variations may be found in the quality, amount, and even the pace of their work (Barkley & Murphey, 1990). Academic performance is often inconsistent and irregular. This causes great frustration for teachers as they have difficulty identifying the student's present level of performance and educating accordingly. The teacher is left wondering what work sample truly represents the student's ability level.

The following behaviors are characteristics of an individual with task performance variability:

- irregularity in day to day activities,
- lack of consistency in performance between school work and home activities, and
- difficulty retaining previously acquired skills.

NOTE: These are all COMMON characteristics of children diagnosed with ADHD. Not all children diagnosed with ADHD exhibit the same degree or intensity of behavioral frequencies. It is important to remember that all children display these behaviors to some degree. Students with ADHD are distinguished by the overall degree and pervasiveness of these behaviors. It is

important to note that children with ADHD represent a heterogeneous population who, normally, display considerable variation.

Other Correlates of ADHD

While the previous section identified the core behavioral characteristics identified with ADHD, other common characteristics can accompany the disorder. It is important to note that these correlates may appear in varying degrees or may not occur at all. No two children with ADHD are the same, nor do they exhibit the same pattern of behaviors.

Emotional Issues

Students with ADHD may display behavior consistent with that of a younger child. They tend to have more frequent and significant temper tantrums (i.e., screaming, yelling, and hitting) for apparently no cause. If requested to work in large group activities, they become overly aroused, over-stimulated and frenetic. Such children tend to be emotionally immature and often alienate their peers.

Social Problems

Children with ADHD may tend to be bossy, competitive, aggressive, and socially immature. They often lack the ability to detect nonverbal cues and tend to be unaware of the effect their behavior has on others. They may experience repetitive conflicts with authority figures and make bromidic statements that they have been treated unfairly. As a result of these behaviors, the child with ADHD often experiences social rejection and peer isolation.

Disorganization

Impulsivity can lead to problems in organization. Many students with ADHD consistently lose assignments or habitually fail to turn them in once completed. These tend to be the students who routinely forget their pens/pencils or other materials required to complete an assigned task. For these students, their lockers, desks, and bedrooms invariably look like areas ravaged by a recent cataclysmic event.

Low Self Esteem

As indicated previously, individuals diagnosed with ADHD, in the absence of effective intervention, tend to experience limited academic and social success in their school and home environments. This lack of success, along with a limited social network, perpetuates low self esteem and can set into motion a never ending cycle of failure, isolation, and an inability to “fit in”.

While this section focuses on what may be perceived as “negative” behavioral traits associated with ADHD, it is important to remember that many individuals diagnosed with ADHD experience

successful and fulfilling lives. Given appropriate interventions and strategies (which are discussed in subsequent sections), individuals with ADHD learn to accommodate their unique needs, build on their strengths and pursue and attain their goals.

SECTION III

WHAT ARE THE DIAGNOSTIC CRITERIA FOR ADHD?

The suspicion of ADHD is the most common reason a child gets referred to a psychiatrist/psychologist (Hubbard, 1994). Referrals come from concerned parents, teachers, and, in some situations, doctors when they observe many of the core characteristics described in the previous section. A diagnosis of ADHD is typically rendered when these core behavioral characteristics adversely affect educational performance and cause a severe discrepancy between the child's intellectual potential and the child's academic performance.

Given the high prevalence of ADHD, it is disconcerting to learn that rendering a diagnosis of ADHD is a rather complex and poorly defined process. The general assumption is that the assessment/diagnostic process is quite standard and prescriptive. This is not the case. At present, there is no single medical test, educational test, or examination method that conclusively establishes the existence of ADHD. However, clinical diagnostic criteria have been developed and refined over the years. The current, and generally accepted, diagnostic criteria for ADHD are listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) published by American Psychiatric Association (1995, see **Table 1**).

It is important to note that the diagnostic criteria in DSM-IV represent specified behaviors that are subjectively determined by the evaluator to be maladaptive and inconsistent with the developmental level of the referred individual. An objective battery of laboratory measures which reliably classifies ADHD children has not been developed yet (Matson,1993). However, using these criteria and a myriad of methods to collect thorough information from multiple informants, ADHD can be quite reliably diagnosed in children and adults (Barkley, 1990). The diagnostic key is to use multiple assessment methods and to gather relevant information from multiple sources.

In medical terms, a diagnosis represents a label that identifies a body of technical knowledge about a disease or disorder. The repeated existence of a similar cluster of behavioral symptoms leads to a diagnostic classification and an assigned label and definition. The diagnostic classification should define the disorder's characteristics and associated symptomalogy, its causes and prevalence, and its effective treatment and prevention. As indicat-ed in previous section, no two children with ADHD are exactly alike, consequently, developing a single standard definition for ADHD is challenging. Barkley (1982, p. 183), however, provided this proposed definition:

> *ADHD is a developmental disorder of attention span, impulsivity and/or over-activity as well as rule governed behavior, in which these deficits are significantly inappropriate for the child's mental age; have an on-set in early childhood; are significantly pervasive or cross-situational in nature; are generally chronic or persistent overtime; and are not the direct result of severe language delay, deafness, blindness, autism or childhood psychosis.*

Why Diagnose ADHD?

An ADHD diagnosis and definition can facilitate professional communication about specific behavioral symptoms, foster research and advocacy on behalf of individuals with ADHD and identify the need to provide additional support and intervention services. The core behavioral characteristics affect both behavior and thought, resulting in a marked degree of inadequate attention to academic and social tasks. An early diagnosis of ADHD is

imperative to identify compensation strategies and to reduce delayed academic and social development.

TABLE 1

DSM IV Criteria

Attention Deficit/Hyperactivity Disorders

Predominantly Inattentive Type (ADHD-IA).

(1) **INATTENTION:** At least six of the following symptoms of inattention have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

(b) often has difficulty sustaining attention in tasks or play activities

(c) often does not seem to listen to what is being said to him or her

(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

(e) often has difficulty organizing tasks and activities

(f) often avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained mental effort (such as schoolwork or homework)

(g) often loses things necessary for tasks or activities (e.g. school assignments, pencils, books, tools, or toys)

(h) is often easily distracted by extraneous stimuli

(i) often forgetful of daily activities

Predominantly Hyperactive–Impulsive Type (ADHD-HI).

(2) **HYPERACTIVITY - IMPULSIVITY:** At least five of the following symptoms of hyperactivity - impulsivity have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level.

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat

(b) leaves seat in classroom or in other situations in which remaining seated is expected

(c) often runs about or climbs excessively in situations where it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)

(d) often has difficulty playing or engaging in leisure activities quietly

(e) is always “on the go” or acts as if “driven by a motor”

(f) often talks excessively

Impulsivity

(g) often blurts out answers to questions before the questions have been completed

(h) often has difficulty waiting in lines or awaiting turn in games or group situations

(i) often interrupts or intrudes on others (e.g., butts into others’ conversations or games)

Combined Subtype. A child must have six symptoms of each.

ADHD - Not otherwise specified type: A catch all type category to classify disorders where there are prominent symptoms of inattention or hyperactivity-impulsivity but not enough features to meet criteria for Attention Deficit/Hyperactivity Disorder

The additional DSM-IV criteria of the following must also be met:

1. Onset of symptoms occurs not later than 7 years of age;
2. Symptoms are present in two or more situations (for example, at home, school or at work);
3. Symptoms do not occur exclusively during the course of a pervasive developmental disorder, or schizophrenia or other psychotic disorders, and is not better accounted for by a diagnosis of a mood

disorder, anxiety disorder, dissociative disorder, or personality disorder; and,

4. Symptoms have been present for the past 6 months.

Who Decides If a Student Has ADHD and How Do They Know?

The DSM-IV diagnostic criteria of ADHD does not specify who is responsible for determining whether a student has ADHD. Schools do not have to consult a physician prior to identifying a child as ADHD. That is, a physician's diagnosis of ADHD is not determinant for school diagnostic decisions. If the parent comes to the school with a diagnosis of ADHD for the student, then the multidisciplinary team would use that as a piece of information to assist in determining which areas may need to be assessed. If there is no current medical diagnosis, the multidisciplinary team would look at the specific needs of the student and conduct an assessment based on other information provided to them. The multidisciplinary team used to evaluate a student referred for ADHD must include someone with specific knowledge of how to determine educational needs and work with students who have ADHD. That expert may be a school psychologist, special education teacher, or other school professional. Of course, the student's parents and, when appropriate, the student him\herself should also participate in the multidisciplinary team. If the student's case conference committee reviews the results of the multidisciplinary team's assessment and believe they are in need of a medical diagnosis to further determine the student's eligibility for special education, the evaluation must be at no cost to the parent or student.

What Is the Assessment Process?

The assessment process begins with a broad-based screening for the presence of ADHD symptoms. It is important to note that a diagnosis of ADHD is not necessarily inevitable just because an individual is impulsive, distractible, or fidgety. Most individuals display these behaviors from time to time. The assessment process should identify only those individuals who exhibit the core behavioral characteristics to a marked degree. That is, when compared to what is developmentally appropriate behavior, individuals with ADHD exhibit these symptoms at a higher rate and duration interfering with their ability to function within a given situation.

It is important for the multidisciplinary team to follow a multimethod assessment when evaluating a student referred for ADHD. The following multimethod assessment issues must be considered:

- Major behavioral symptoms must be assessed relative to normal developmental standards and measurement of the primary symptoms compared to the normative.
- Other psychiatric, learning, or emotional disorders must be ruled out as a primary cause of behavioral difficulties.
- The presence of co-existing problems should be thoroughly assessed.
- Multiple informants from diverse settings should provide information.
- Wide age-range assessment methods must be employed to adequately document the existence of ADHD at various ages.
- Multiple assessment methods including a review of academic, medical, and family history; academic achievement tests; structured behavioral interviews; behavior rating scales; and observational data must be used.

(DuPaul & Stoner, 1994)

What Else Looks like ADHD?

Rendering a diagnosis of ADHD is complicated due to the fact that children with ADHD are a heterogeneous population who display considerable variation with regard to severity of symptoms, situational pervasiveness, and the degree to which comorbid conditions are present. Comorbid conditions may include symptoms of depression, anxiety, thought disorders, bi-polar disorder, pervasive developmental disorders, and medical conditions (seizure, sleep and thyroid disorders). Stressful environmental factors may produce ADHD-like symptoms as well.

Disorders That Co-exist with ADHD

Several additional or secondary problems are frequently present in ADHD children. Up to 44% of children with ADHD have at least one co-existing disorder (Appleton, 1995). First, ADHD children frequently exhibit low frustration tolerance, general noncompliance, temper outburst, aggressive behaviors, and conduct problems. There is substantial overlap between ADHD and conduct disorders. Additional problem areas may include: below-average cognitive ability, academic underachievement, specific learning disabilities, low self-esteem, mild depression, mood lability, vision and language problems, accidental injuries, allergies, chronic health problems, and deficits in social skills with corresponding difficulties developing and maintaining age-appropriate peer relationships. It is important to design an individualized assessment process which uncovers co-existing disorders. Further, these co-existing conditions must be considered when developing an intervention plan. A student may not respond to an intervention if these conditions are not appropriately identified and addressed. For example, employing a medication regimen designed to improve attention and concentration will not be sufficient for addressing a student's reading disability.

The following conditions should be considered during the assessment process:

Academic Difficulties

Approximately 80% of students diagnosed with ADHD experience academic difficulties (Barkley, 1990). Likewise, ADHD is considered to be 3 to 4 times more prevalent in children who are mentally handicapped. Students with ADHD may show some features of a cognitive disorder.

Learning Disabilities

Teachers and parents frequently report that children with ADHD underachieve academically. Given this association, it is important for educational personnel and families to be mindful of potential learning difficulties. A portion (20%-30%) of children with ADHD are classified as "learning disabled" due to deficits in the acquisition of academic skills (DuPaul & Stoner, 1994).

Cognitive Impairment and Speech Disorder

Differences between children with ADHD and children without ADHD have been noted in terms of ability to complete tasks that require complex problem solving and organizational skills (Tant & Douglas, 1982). The strategies that students with ADHD apply on these type of tasks are often ineffective and inefficient. In addition, children diagnosed with ADHD experience a higher degree of difficulties in speech and language development (DuPaul & Stoner, 1994). Children with ADHD experience language development delays at a much higher rate than non-ADHD children (DuPaul & Stoner, 1994).

Emotional Disorders

Oppositional/Defiant Disorder (ODD) and Conduct Disorder

The problems that are most frequently associated with ADHD include defiance or non-compliance toward authority figures. Problems with noncompliance and temper control presently comprise the psychiatric category of Oppositional Defiant Disorder (APA 1994). Children with ADHD tend to have difficulty completing tasks or following instructions, which sometimes is due to non-compliance. However, it is not surprising that ODD and conduct disorder are the most common co-diagnoses with ADHD. Nearly 40% of children with ADHD and 65% of teenagers with ADHD have a co-diagnosis of ODD or conduct disorder behaviors (Berkley, DuPaul, & McMurray, 1990).

Mental Disorders

Thought Disorders

"Thought Disorders" can also occur in conjunction with ADHD. The decisions made by these individuals tend to be associated with delusional and sometimes grandiose thinking. Such individuals show abnormalities in their thought processes and are generally unpredictable in their behaviors.

Bi-polar disorder

Bi-polar disorder is primarily a hereditary condition which is typically not manifested until later years. However, many individuals diagnosed as bi-polar exhibit many of the ADHD core behavioral characteristics of over-activity during their childhood and into adulthood.

Depression

Research has shown that children and adults with ADHD exhibit a higher rate of depression than those who do not have ADHD. It is very difficult for children with ADHD to initiate and maintain friendships. Their history of academic and social failure leads to a low self-esteem which can fall into a sequence of depression.

HOW DO WE COLLECT DATA TO DIAGNOSE ADHD?

Screening for possible ADHD is usually the initial step in the assessment process. Screening is generally initiated when the teacher and/or parent notices a student's difficulties attending to a task, completing an assignment, or inability to remain seated throughout a class. Teachers and parents are typically interviewed to gather information on the frequency, intensity, and duration of the problem behaviors, along with the antecedent and consequences to the behaviors. The results of this assessment establish the need for a further, more comprehensive assessment.

A comprehensive evaluation is then conducted. Examples of typical multiple assessment techniques are further described below.

Academic Assessment

It is important to remember that ADHD is a disorder which affects the student's academic ***performance***, not capacity (DuPaul, 1998). However, a large portion of students with ADHD also experience academic difficulties which range from mild problems in academics to learning difficulties. It is important to note that the tests most frequently employed by school psychologists (i.e., Wechsler Intelligence Scale for Children-Third Edition [WISC-III], Stanford Achievement Test, Woodcock- Johnson Psychoeducational Bettery-Revised) are not reliable independent diagnostic indicators for ADHD due to their inability to differentiate ADHD children from children with learning disabilities or other conditions. Furthermore, students with ADHD perform inconsistently on academic assessments. Differential test performance may be due to differences in test taking skills such as greater levels of inattention among the ADHD group relative to their counterparts without ADHD. Additional assessment techniques are required to effectively diagnose and identify appropriate interventions for behaviors associated with ADHD.

Record Review

A review of the student's educational record is completed to secure data regarding the onset of the classroom difficulties, academic performance, and a history of documented behavioral problems in the classroom.

Interviews

The initial screening phase of diagnosing ADHD begins by interviewing the parent, teacher, and student, as appropriate. Parent information provides an overall picture of the student's developmental and medical history, parental expectations, behaviors exhibited in the home environment, and strategies the parents have attempted to effectively manage the behaviors. In addition, this parental interview serves as a valuable resource when identifying intervention strategies in the classroom (e.g., parental willingness and knowledge base, motivating reinforcers). Other purposes of a parent interview are to reveal the degree of distress that their son or daughter's problems are causing parents and other family members, to reveal important aspects of parent-child interactions and relationships, and to help focus parents' perceptions on important specific events and circumstances that control or influence the student's problems.

Teacher interviews provide information on the student's overall performance in the classroom, current behavior in the classroom, academic performance, interventions attempted, and classroom behavior management style of the teacher. A good teacher interview also provides information on the type of instructional techniques that serve as antecedents to problematic behaviors and the consequences students experience as a result of those behaviors. The teacher can provide information to assess the frequency, duration, and intensity of a child's problem behaviors.

A student interview yields the child's self-perceptions of behavioral problems and fosters student involvement in identifying coping strategies and classroom interventions. In addition, during a student interview, the evaluator is able to observe behaviors such as responsiveness to limit setting, impulsivity, distractibility, reaction to frustrations or praise, expressive and receptive language, emotional reactions, nervous mannerisms, and range of affect.

Student interviews, however may not always be appropriate, especially with very young children (under 6 years) because of low reliability of the information obtained.

Behavior Checklists and Rating Scales

Behavior checklists and rating scales are completed by the student, parent and teacher. Behavior rating scales allow for differing perspectives or viewpoints of the child's behavior problems, and give some insight as to the degree to which the child meets the criteria for a particular diagnostic process and the extent to which other problems may be present. Well constructed behavior rating scales yield results which allow for comparison to normative scores from a sample of children similar in age and gender. This comparison then allows some degree of interpretation relative to the degree of deviation from normal limits. The Conner's Parent and Teacher Rating Scale-Revised (CPRS-R) [Goyette, Conners, & Ulrich, 1978), and the Child Behavior Checklist (CBCL) [Achenbach, 1991) are commonly used behavior rating scales. Parents and teachers may also complete the ADHD Rating Scale (Barkley, 1990) which provides specific diagnostic information related to the severity of ADHD symptoms.

Behavioral Observation

Direct behavioral observations of students are designed for assessing both adaptive (positive) and problem behaviors commonly noted within classroom settings. Structured observational systems usually require a 15-20 minute observational period. The observational period is divided into 15-30 second intervals where the observer records whether target behaviors are displayed or not. Structured behavioral observations provide information on the frequency and severity of behavioral problems. No assessment technique provides more specific information than actually observing the frequency of the student's target behavior(s), antecedents and consequences to the target behavior(s), and how target behaviors relate to the student's academic and social functioning (DuPaul & Stoner, 1998). In addition, observing and collecting information on the teacher's behaviors, such as positive attention and/or negative consequences can also prove to be valuable information. The ADHD Behavior Coding System (Barkley, 1990) and Hyperactive Behavior Code (Jason, O'Leary, & Rosenblad, 1978) are two commonly used behavior observation forms.

Once the multidisciplinary team completes the assessment process, a report is developed that typically includes information regarding the student's medical and developmental history, academic assessment, observational data, interview findings, behavioral rating scale results, and recommendations or suggested intervention strategies. This report, once finalized, provides the framework to develop an intervention plan, which when implemented consistently, assists in the management of the student's behaviors associated with ADHD.

SECTION IV

WHAT SERVICES ARE AVAILABLE FOR INDIVIDUALS DIAGNOSED WITH ADHD?

Not all children and adults with ADHD require support services in order to lead productive and successful lives. However, many individuals diagnosed with ADHD require services and supports in order to compensate for their behaviors which may be viewed as atypical or counterproductive. This section will describe the processes for obtaining supportive services under two federal laws. An individual with ADHD may be eligible for special education services and/or accommodations under **Section 504** of the **Rehabilitation Act of 1973**, or s/he may qualify for special education and related services under the **Individuals with Disabilities Education Act** (**IDEA**). Special support services may be provided in either general or special education classrooms. The following sections articulate the eligibility criteria under Section 504 and the IDEA.

Section 504

Section 504 of the Rehabilitation Act of 1973 provides that recipients of federal financial assistance (e.g., public schools) shall not discriminate against individuals on the basis of disability. Although the protections afforded to individuals under Section 504 are quite similar to IDEA entitlements, eligibility for Section 504 is broader in terms of its scope of applicability and eligibility coverage. For example, Section 504 is applicable to employment and educational settings, whereas IDEA addresses only educational settings. Students with ADHD who qualify for services under Section 504 must have a documented disability which constitutes a substantial limitation in one or more major life activities. Eligibility is determined on a case-by-case basis. Section 504 ensures that no person with a disability is denied participation in any program or activity receiving federal assistance. Students who qualify under Section 504 are entitled to a 504 Accommodation Plan. This written plan describes the student's disability, its effect on performance, and the services and/or accommodations necessary to enable student participation and to provide the student with a free appropriate public education. School personnel, parents and the student, if appropriate, need to work collaboratively to develop the plan and ensure that the student is provided necessary supports. The 504 Accommodational Plan should be reviewed annually or more frequently if conditions warrant.

Eligibility

If the parent or school personnel suspect that a student, because of his/her disability, requires accommodations or services in order to effectively participate in school academics and programs, the public school must evaluate the student.

A person is qualified as disabled under Section 504 if he or she:

- *Has a mental or physical impairment which substantially limits one or more of such person's major life activities;*
- *Has a record of such an impairment; or*
- *Is regarded as having such an impairment.*

> "**Major life activities**" include functions such as caring for one's self, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning and working. When a condition does not substantially limit a major life activity,

the individual does not qualify under Section 504.

Section 504 includes students deemed eligible under IDEA; however, Section 504 also includes other students that IDEA does not include. IDEA employs a categorical approach to defining a disability (e.g., learning disability, mental retardation, emotional disturbance, etc.). Section 504 incorporates a functional approach. In other words, if a person functions as if he or she is disabled, then under Section 504, the person is disabled.

Individuals with Disabilities Education Act

The Individuals with Disabilities Education Act (IDEA) is the statute which ensures a free appropriate public education to all eligible students with disabilities. The IDEA affords students the opportunity to receive special education and related services as determined in the Individualized Education Program (IEP) at no cost to the parents.

Eligibility

It is important to note that IDEA does not specifically mention ADHD. ADHD is not a specific eligibility category. As the IDEA was reauthorized in 1990, Congress deliberated over including ADHD in the definition of "children with disabilities" in the statute. After due consideration, The U.S. Department of Education (DOE) determined that ADHD did not need to be a separate special education disability category because children with ADHD may be eligible for special education services under other disability categories within the law. In a 1991 policy statement, however, the U.S. DOE clarified the eligibility status of ADHD children under the IDEA. ADHD children may be eligible for special education services under the IDEA if they satisfy the criteria applicable to either a specific learning disability or a serious emotional disturbance. Further, the DOE policy memorandum indicated that ADHD children may be classified as eligible for IDEA services under the "other health impaired" category in instances in which the ADHD is a chronic or acute health problem that results in limited alertness and has an adverse affect on the student's educational performance.

State Regulations

Like the federal regulations, Article 7, Indiana's implementing regulations for special education services, does not include ADHD as an eligibility category. After a review by the State Board of Education, it was decided that a separate category for ADHD was unnecessary, particularly in light of the new funding formula instituted in 1995. Indiana currently utlizes a funding formula which is not disability specific. The funding formula arranges disability categories into three (3) groups:

(1) *SEVERE* which includes Autism Spectrum Disorder(AU), Deaf-blind (DB), Orthopedic Impairment (OI), Traumatic Brain Injury (TBI), Visual Impairment (VI), Hearing Impairment (HI), Severe Mental Disability (SMD), and Emotionally Disability Full Time (ED-FT);

(2) *MILD/MODERATE* which includes Mild Mental Disability (MiMD), Moderate Mental Disability (MoMD), Learning Disability (LD), Emotional Disability non Full Time (ED), and Other Health Impairment (OHI); or

(3) *COMMUNICATION DISORDER* (CD).

Some children with ADHD may be classified under the "Other Health Impairment" category, others may be eligible under "Emotionally Disability, non Full Time" or "Learning Disability" provided they meet the eligibility criteria. Such students for purposes of funding would be counted as "mild/moderate". Therefore, creating a separate disability category for ADHD would not increase educational services for such children.

As mentioned previously, the entitlement under the IDEA is a student's right to receive a free appropriate public education (FAPE). An eligibility classification should not dictate the placement and type of services the student receives. Placement decisions may not be based on factors such as the special education "label", administrative ease, and availability of services. Instead, placement decisions must be based on the individual needs of the student regardless of disability label. The key for determining whether a student is receiving a FAPE is the student's IEP. The IEP must be developed through a case conference committee and based on the student's educational strengths and needs.

Eligibility

If parents or school personnel feel that a student's attentional or behavioral difficulties are interfering with the student's academic performance, several options are available. First, the school could develop a teacher assistance team, including parents and professionals familiar with the student. In Indiana, this is often referred to as general education intervention. The teacher assistance team designs educational adaptations and interventions for implementation in the general education classroom. Attempts are made to address the student's difficulties informally without making a formal referral for special education or Section 504 evaluation. Nonetheless, this process cannot be used to delay or deny a parent's request for a formal referral for special education services. In other words, the family may choose to skip the informal intervention and pursue a formal evaluation at any time.

If the interventions designed by the teacher assistance team have not produced satisfactory improvements in the student's academic progress, a second option is to pursue an evaluation for special education eligibility. To make this determination, the teacher assistance team should carefully review the student's educational record to see if there is a basis for suspecting eligibility in one of the Article 7 disability categories. For example, to refer for a special education evaluation based on an emotional disability (ED) the team should review the five potential identifying behavioral factors included under the ED eligibility criteria. If an Other Health Impairment (OHI) is suspected, the team should consider if the ADHD represents a chronic health problem resulting in limited alertness. Whatever suspected disability category, in all situations the disability must adversely affect educational performance and the student must need special education to benefit from his/her educational experience.

Once a referral for an evaluation for special education services is made, the multidisciplinary assessment team begins to collect data through individual standardized multi factored tests of learning capability which includes an assessment of academic strengths, weaknesses, and present levels of academic functioning. In addition, for suspected ADHD, the evaluation would include consideration of the criteria previously described in the Diagnostic and Statistical Manual of Mental Disorders (DSM -IV).

Following the completion of evaluation, the case conference committee will convene a meeting to determine whether or not the student has a disability under Section 504 or Article 7. It is important to remember that these are two distinctly different processes. It is possible that a student may be referred solely for Section 504 and such an evaluation would not necessarily be as comprehensive as one for possible special education services. However, if the referred student is not found eligible for special education under Article 7, the case conference committee should regroup and consider whether the student meets the eligibility criteria under Section 504 instead.

To assist the case conference committee in making an ADHD eligibility determination under the IDEA/Article 7 or Section 504, the following set of questions and answers may be of assistance.

These questions and answers have been adapted from U.S. DOE Office of Special Education Programs (OSEP) documents.

If a student has a medical diagnosis of ADHD does that automatically establish a student's eligibility for services under IDEA and Section 504?

To be eligible for services under Article 7, a child must be evaluated in accordance with 511 IAC 7-25 and found to have one or more specified physical or mental impairments which requires special education services. The medical statement alone is insufficient to establish eligibility. IDEA requires a multidisciplinary approach and Section 504 requires a variety of sources to determine eligibility. A single medical diagnosis would not be sufficient under either law.

Are medical assessments required to determine a student's eligibility for IDEA and/or Section 504?

The IDEA and Section 504 do not necessarily require that a school corporation perform a medical assessment of a student who has or is suspected of having ADHD. Neurological or medical evaluations have little bearing in identifying appropriate educational interventions for the student. Alternative assessment methods (i.e., behavior rating scales, interviews, standardized academic assessments) are sufficient if they meet the evaluation criteria for eligibility under the IDEA disability categories and Section 504. If, however, the school concludes that a medical assessment is warranted in order to complete an appropriate evaluation, the school must ensure that this assessment is at **no cost** to the parents.

Is it possible for a child with ADHD to be eligible for special education services under a category other than "other health impaired"?

Children with ADHD are not limited to eligibility under the category of OHI. They might also meet the eligibility criteria under other specific disability categories such as a learning disability or emotional disability. The student must meet the eligibility criteria as defined in Article 7, the disability must adversely affect the student's educational performance, and the student must require special education services in order to benefit from his/her educational experience.

May a student be given detentions, suspensions or expulsions for behaviors that are a direct result of his/her disability?

Under the IDEA and Section 504, prior to a suspension for more than 10 consecutive instructional days or an expulsion of a student with a disability, a case conference must be held to determine if the student's misconduct is or is not a manifestation of his or her disability. If it is determined that there is a relationship between the student's disability and the misconduct, the student may **not** be suspended for more than 10 consecutive instructional days. If the misconduct is not related, the school corporation may impose disciplinary actions. However, even under these circumstances, the 1997 IDEA Amendments require that special education services be continued to legally suspended or expelled students with disabilities. The effect, therefore, of a legally valid long-term suspension or expulsion decision is to restrict the location of where the student with disabilities receives special education services, not the total denial of special education services. Special education services, may, however, be discontinued for short-term

suspensions (less than 10 consecutive instructional days). A parent will still have rights to due process to determine if the decision was correct.

Can a teacher refuse to provide accommodations to a student with ADHD?

The IDEA and Section 504 protect the rights of individuals with disabilities to receive a free appropriate public education, including necessary accommodations and interventions. Teachers or administrators cannot refuse to provide accommodations and intervention strategies which are listed within a student's IEP. In fact, Section 1983 of The Civil Rights Act of 1971 authorizes private individual lawsuits in which injunctive or monetary relief or both are sought when governmental officials (e.g., school personnel) violate a federal statutory (e.g., IDEA) or constitutional right. The appropriate education of students with ADHD is the responsibility of both general and special educators.

SECTION V

WHAT INTERVENTIONS ARE EFFECTIVE?

Due to the nature of ADHD symptoms, intervention programs for children with ADHD should be multi-faceted, drawing from medical, behavioral and therapeutic approaches. There is no one universally prescribed treatment or intervention for a child who receives a diagnosis of ADHD. Treatment and intervention decisions must be made on a case-by-case basis. Treatment or intervention plans must be tailored to meet the individual needs of the student. A comprehensive intervention plan should develop academic skills, increase self management skills, and improve social/interpersonal skills.

There are many factors to consider when developing intervention plans for students with ADHD.[1]

- Teachers need to be **flexible** and have the **commitment** to put forth a considerable amount of time and energy to make the changes and accommodations necessary to ensure student success.
- It is imperative that **teachers** and **parents** are **knowledgeable** about ADHD, its history and etiology, treatments, and interventions. An increased understanding of the disorder provides the teacher and parents with the ability to understand and deal with challenging behaviors. More importantly, increasing the teacher/parent knowledge equips them with the skills and strategies to effectively work with and teach children with ADHD.
- **Communication** and **coordination** between the **school** and the **parent** are essential to success. In order to experience any success with ADHD students, parents and teachers need to work together to provide continual and consistent intervention and reinforcers.
- Students with ADHD thrive on **structure** and **clear expectations**. They need direct communication, clear instructions, frequent reinforcers and consistent rules and consequences.
- Students with ADHD thrive on creative, engaging, and **interactive teaching strategies**. Teachers need to utilize unique and multisensory teaching strategies, cooperative learning techniques, and other instruction strategies which are novel, stimulating, and actively engage the student in the learning activity.

The above factors create opportunities for students to achieve academically and socially. The majority of students with ADHD can be successful in the general education classroom if provided with minor interventions as previously discussed. However, some individuals with ADHD require more extensive accommodations and interventions. In order to effectively address these more complex behaviors a more structured approach is warranted. Formal intervention strategies may include the following (each intervention approach will be discussed in detail later within this section):

- Training on ADHD,
- Environmental and instructional interventions,
- Behavioral modifications,
- Family and/or individual counseling,
- Social skills training, and

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[1] *Modified from: Rief, S.F. (1993). How to Reach and Teach ADD/ADHD Children*. West Nyack, NY: The Center for Applied Research in Education.

- Communication and collaboration.

TRAINING ON ADHD

Teachers and parents may be repeatedly frustrated by the student's behavior at school, at home, and in the community. The student is frequently on the go, impulsive, argumentative and accident prone. When teachers, parents and siblings do not fully understand these behaviors they become increasingly frustrated.

Teachers and parents need information to increase their understanding of ADHD and its etiology as well as access to training which equips them with the tools and skills necessary to successfully intervene with the student's disruptive behaviors. Successful training programs target challenging behaviors and equip teachers and families with multiple strategies and techniques to implement effective interventions. As teachers, parents, and administrators begin to understand that the behaviors associated with ADHD are not deliberate nor intentionally designed to cause problems, their interaction with students improves. There is less blaming of the student, and more time and energy is focused on developing effective supports and interventions.

A list of possible training resources for parents and teachers may be found on the following two pages.

This list is representative - not inclusive.

Resource Guide for Parents, Students and Teachers

Adkins, Lynne, (Video and Booklet), *Help! These Kids are Driving Me Crazy! The Young Child with ADD.*

Alvord, Jack, (1973) *Home Token Economy: An Incentive Program for Children and Their Parents.*

Barkley R.A., (1991) *ADHD, A Clinical Workbook.*

Barkley, R.A., *Taking Charge of AD/HD: The Complete Authoritative Guide for Parents.*

Braswell, Ph.D.; M. Bloomquist, Ph.D.; & S. Pederson, M.A. *ADHD: A Guide to Understanding and Helping Children with Attention Deficit Hyperactivity Disorder in School Settings.*

Berg, Berthold, Ph.D., *The Self-Control Workbook: Exercises to Control Inattention, Impulsivity, and Hyperactivity.*

Camp, B., & Bash, M., (1981) *Think Aloud: Increasing Social and Cognitive Skills-A Problem-Solving Program for Children*.

Canter, Lee, *Help! It's Homework Time: Improving Your Child's Homework Habits.*

Canter, Lee, *No More Bedtime Battles: Simple Solutions to Bedtime Problems.*

Canter, Lee, *What To Do When Your Child Won't Behave: A Practical Guide for Responsible Caring Discipline.*

C.H.A.D.D., (1993) *The CHADD Educator's Manual*.

Child Psychopharmacology Center - UWM, (1990) *Stimulants and Hyperactive Children: A Guide*.

Clark, L., *SOS: Help for Parents.*

Coleman, Wendy, M.D., *Attention Deficit Disorders, Hyperactivity and Associated Disorders*.

Copeland, E.D., *Medications for Attention Disorders (ADHD/ADD) and Related Medical Problems*.

Copeland, Edna D., *Attention, Please! A comprehensive guide for successfully parenting children with Attention Disorders and Hyperactivity*.

Copeland, Edna, D., *Attention without Tension: A Teacher's Handbook on Attention Disorders*.

Eisenberg, Nancy, (1994) *Teach and Reach Students with Attention Deficit Disorders: The Educator's Handbook and Resource Guide*.

Freidman, Ronald J., *Attention Deficit Disorder and Hyperactivity: Second Edition*.

Fowler, Mary, (1990) *Maybe You Know My Kid: A Parent's Guide to Identifying, Understanding, and Helping Your Child with Attention Deficit Hyperactivity Disorder*.

Greenberg, G. & Horn, W., *Attention Deficit Hyper-Activity Disorder: Questions and Answers for Parents.*

Gehret, Jeanne, (1991) *Eagle Eyes: A Child's Guide to Paying Attention*.

Goldstein, Samual, (Video) *Educating Inattentive Children*.

Goldstein, Samual, (Video) *It's Just Attention Disorder, A Video Guide for Kids*.

Goldstein, Samual, *A Teacher's Guide: Attention-Deficit Hyperactivity Disorder in Children, Third Edition*.

Goldstein, Samual & Goldstein, Micheal, *Hyperactivity: Why Won't My Child Pay Attention*.

Gordan Michael, (1993) *I Would If I Could - A Teenager's Guide to ADHD/Hyperactivity*.

Hafner, Claire, R.N., M.S.N., *Learning To Parent the Hyperactive Child.*

Hartman, Thom, (1993) *Attention Deficit Disorder: A Different Perception*.

Ingersoll, Barbara, (1988) *Your Hyperactive Child: A Parent's Guide to Coping with Attention Deficit Disorder.*

Jones, Clare, B., Ph.D., *A Sourcebook for Children with Attention Deficit Disorder: A Management Guide for Early Childhood Professionals & Parents.*

Jordan, Dale R., (1992) *Attention Deficit Disorder: ADHD and ADD Syndromes.*

Kelly, M., Ph.D., *School-Home Notes: Promoting Children's Classroom Success*.

Lavoie, Richard (Video) *Last One Picked...First One Picked On: Learning Disabilities and Social Skills Parent's Guide and Parent's and Teacher's Guide*

Levine, Mel, M.D. *Keeping A Head In School: A Student's Book About Learning Abilities and Learning Disorders*.

Mannix, Darlene, *Social Skills Activities for Special Children*.

Maxey, Darlene, *How to Own and Operate an Attention Deficit Kid*.

McCarney, Stephan, (1989) *The Attention Deficit Disorders Intervention Manual*.

Moss, Robert, A., M.D., (1990) *Why Johnny Can't Concentrate: Coping With Attention Deficit Problems*.

Nadeau, Kathleen G., Ph.D., *Learning to Slow Down and Pay Attention*.

Nadeau, Kathleen G., Ph.D., *School Strategies for ADD Teens: Guidelines for Schools.*

Nadeau & Biggs, *School Strategies for ADD Teens*.

Nelson, Jane, Ed.D., *Positive Discipline*.

Pacer Center, Inc., (1991 Video) *Parent Perspectives: Raising Children with Emotional Disorders*.

Parker, Harvey, C., Ph.D., *The ADD Hyperactivity Workbook for Parents, Teachers and Kids*.

Phelan, Thomas, W., Ph.D., *All About Attention Deficit Disorder: Symptoms, Diagnosis and Treatment: Children and Adults.*

Reif, Sandra F., (1993) *How to Reach and Teach ADD/ADHD Children*.

Schirmer, Gene, J., Ph.D., (1983) *A Positive Approach to Discipline for Parents of the Young Child*.

Shapiro, Edward S., *Behavior Change In The Classroom: Self-Management Interventions*.

Sloan, Mark. A., *Educational Strategies for Students With Attention Deficit Disorder*.

Taylor, John F., Ph.D., (1993) *The Attention Deficit/Hyperactive Student At School: A Survival Guide for Teachers*.

Taylor, John F., Ph.D., *Motivating The Uncooperative Student: A GuideBook for School Counselors*.

Quinn, Patricia O., M.D., *Putting On The Brakes: A Young People's Guide to Understanding Attention Deficit Hyperactivity Disorder (ADHD)*.

Quinn, Patricia, O., M.D., *The "Putting On The Brakes" Activity Book*.

Walker H., & Walker, J., *Coping with Non Compliance in the Classroom: A Positive Approach*.

Most of these materials can be ordered through: ***ADD Warehouse***

300 N. W. 70th Avenue, Suite 102

Plantation, Florida 33317

(800) 233-9273

ENVIRONMENTAL AND INSTRUCTIONAL INTERVENTIONS

Environmental Modifications

Modifying the immediate environment often brings about positive behavior. Before trying to change the behaviors of the child, which is more difficult and time intensive, you may be better off altering the school or home environment (Garber, 1996).

Several studies have indicated that a student's placement in a classroom may significantly impact his/her ability to pay attention. Sitting closer to the teacher and away from extraneous stimuli (e.g., noise) may substantially improve the student's ability to attend. This concept can also be applied in the home environment. Finding a quiet location for the completion of homework assignments may ensure successful completion and accuracy.

Close proximity to the teacher not only provides a less distracting placement, it also provides more supervision and opportunities to re-direct the student when he or she drifts off task. It is important to note, however, that no one location is best for a student with ADHD. Simply placing the student closer to the teacher does not automatically cure the problem. Finding the least distracting placement for the student is a process of trial and error (Garber, 1996). You may even allow the student with ADHD to use ear plugs or headphones to block extraneous noise.

An adaptation in a school routine also has been proven as an effective environmental modification to limit behaviors associated with ADHD. Determining the best time for productive work is informative for scheduling purposes to foster maximum productivity. Depending upon medications and natural predisposition, some ADHD students are more productive in the morning; whereas, others are more productive after lunch. Nonetheless, identifying the student's "good" time may provide a window of opportunity for instruction. Likewise, determining the best time to complete homework is also an effective mechanism to ensure homework accuracy and completion. Some students may want to complete homework immediately after school, others need to take a break or play before they are ready to conquer the homework task. Again, teachers and parents must find the best schedule through trial and error.

Instructional Modifications

The ability to hold students' attention is a difficult task. Keeping a student focused often requires a variety of instructional strategies and approaches. Teacher modeling of their excitement and enthusiasm for school and learning plays a powerful role in maintaining students' attention. In addition, through effective questioning and active involvement of students in learning activities, teachers stimulate critical thinking and interest their students in future lessons.

According to statistics, students retain:

- 10% of what they read;
- 26% of what they hear;
- 30% of what they see;
- 50% of what they see and hear;
- 70% of what they say; and
- 90% of what they say and do.

Reif, 1993

Students are more apt to attend to a lesson if demonstrations and hands-on activities are incorporated into teaching whenever possible. We all have different learning styles that affect the way we obtain, retain, and utilize information. Some students learn better through their vision; others learn more effectively through listening. Lessons need to be presented using a combination of methods. For visual learners use maps, pictures, graphs, colored pens and markers. For auditory learners, reduce background noise and repeat important points of the teacher lecture, directions, or class discussion. Provide lots of hands-on experiences that promote learning by doing. Students who work together and have the opportunity to discuss activities and participate in lessons will have the most success.

Modify the task

Students with ADHD may be overwhelmed with the amount of work they are assigned. Modifying the way in which assignments are given, laid out, and completed may significantly impact a student's performance. A student with ADHD is much more likely to complete an assignment if assignments are parceled out one at a time. If a student with ADHD is given multiple assignments, he or she may become overwhelmed and not finish any of the assignments.

Strategies which may be used to modify an assignment might include:

- reducing the number of problems on a page;
- using a colored marker to highlight key words;
- reading tests or assignments outloud;
- allowing the student to give the answer orally;
- tape recording directions;
- providing examples of what the completed work should resemble;
- allowing enough guided practice time prior to expecting independent work;
- providing flow charts depicting directions; and
- dividing the assignment into smaller segments or parts.

Simplify Directions

It is not uncommon for a student with ADHD to misinterpret or forget directions and to complete the task in error. For example, the student may complete all of the even numbered questions when the odd numbered items were assigned. To minimize these problems, it is important to look directly at the student when assignments are given. Request the student repeat the directions to ensure he or she understands what to do. You can also have the student circle or underline the important words in the written instructions.

Team Teaching

Team teaching can provide significant benefits to both teachers and students. Team teaching enables teachers an opportunity to teach in their area of strength and interest. This, in turn, motivates students because they are being taught by teachers who vary their instructional approach and are enthusiastic about their subject matter. In addition, teachers are usually delighted to share their ideas and strategies which ensures communication and collaboration across classrooms.

Peer Tutors

Students who exhibit behaviors associated with ADHD can be challenging in the classroom. As a result, teachers are often in need of additional staff to provide one-to-one assistance to students with ADHD. Unfortunately, it is

not always feasible to obtain a classroom aide to assist teachers who must deal with challenging behaviors. Nevertheless, there are creative solutions that provide assistance for the classroom teacher. Peer tutors have been effectively used to provide academic assistance to classmates or to students in other grades. The implementation of peer tutoring in a classroom not only eases the teacher's work load; students often learn best from their peers.

Peer tutors can provide a good role model for a student with ADHD. The role model can assist the student with ADHD by prompting him/her to stay on task, to verify homework assignments, and to take home books (Garber, 1996). Peer tutoring relationships may also become friendships.

A list of suggested intervention strategies/accommodations for use in the classroom or at home with students who exhibit behaviors associated with ADHD begins on the following page.

Please note, this list is not exhaustive. It only provides some suggested strategies.

SPECIFIC BEHAVIORS	INTERVENTION STRATEGY/ACCOMMODATION
The student fails to complete an assignment or task.	• Reduce the assignment into manageable sections with specific due dates. • Make frequent checks for assignment completion. • Assign small amounts initially, then gradually increase the amounts. • Work a few problems with the student to serve as a model. • Allow the student to keep an extra set of books at home. • Keep verbal and written directions short and provide examples. • Make frequent checks for work/assignment completion and provide reinforcement. • Arrange a "study buddy" for the student to call for assistance. • Increase the frequency of positive reinforcements. • Define the requirements of a completed activity. • Alter seating assignments, provide earphones, or study carrels. • Use physical proximity and touch. • Check to ensure that the student has all required materials to complete a task. • Use a timer to increase on-task behavior. • Have the student self-monitor by using a task check off sheet. • Assign a peer to assist the student with homework. • Provide a student assignment notebook and have the teacher and parent check it daily. • Gain student's attention prior to giving instructions. • Give one direction at a time. • Repeat directions and check for understanding. • Provide specific instructions and expectations. • Do not present the instructions as a question or a favor.

SPECIFIC BEHAVIORS	INTERVENTION STRATEGY/ACCOMMODATION
The student shifts from one uncompleted activity to another.	
The student has difficulty sustaining attention to a task or other activities (easily distracted by extraneous stimuli).	
The student fails to complete homework assignments and turn them in.	
The student has difficulty following instructions.	

SPECIFIC BEHAVIORS	INTERVENTION STRATEGY/ACCOMMODATION
The student has poor listening skills.	• Reinforce good listening skills. • Rephrase as necessary. • Use close proximity to ensure the student's attention.
The student acts before thinking.	• Teach the student how to ask questions to obtain needed information. • Present more difficult subjects when the child's performance is better.
The student has difficulty following rules and routines.	• Reinforce positive behavior. • Set clear expectations. • Reiterate rules frequently - especially before new activities. • Establish firm routines and maintain them.
The student blurts out answers and frequently interrupts.	• Clearly state behaviors you don't want. • Provide positive attention.
The student reacts poorly to adult interaction and refuses to comply.	• Assign the student a special responsibility. • Seat the student next to a positive role model. • Ignore minor distractions. • Discuss student problems privately.
The student has difficulty with changing rules: school, bus, cafeteria, recreational activities, etc.	• Develop a home/school reward system. • Allow for organizational time. • Provide a list of materials needed to complete task.
The student has poor organization skills.	• Teach organizational skills. • Assist student in keeping specific materials in a specific place. • Provide reinforcement for completed, organized homework.

SPECIFIC BEHAVIORS	INTERVENTION STRATEGY/ACCOMMODATION
The student frequently turns in sloppy or messy work. The student loses items necessary to complete an assignment. The student loses homework, books and materials. The student experiences frequent mood swings. The student is easily annoyed or frustrated. The student has difficulty with delaying gratification. The student appears to not be interested in rewards as a means of changing long-term behavior. The student does not appear to be motivated by future positive reinforcers. The student engages in constant motion and fidgeting.	• Provide peer assistance. • Color code books, assignments, etc. • Maintain an assignment book. • Reinforce successful attempts to organize. • Provide organizational checklist. • Provide on-going reminders initially. • Allow the student to have an extra set of books at home. • Prioritize activities. • Work with the student to determine situations what cause stress. • Role play and practice alternatives. • Establish a behavioral contract to encourage positive behavioral changes. • Modify situations which are stressful. • Provide the student with opportunities for success. • Establish reward systems, gradually increasing time between rewards. • Use a calendar to chart “good” behavior and reward payoffs. • Present interesting/attractive tasks. • Make sure natural reinforcers are used. • Provide reinforcement at routine times so s/he will know when to expect it. • Provide needed break times. • Increase supervision during difficult times. • Allow student to stand by desk, kneel on chair, etc. • Provide a safe place to get away or regain control. • Allow alternative places to work. • Provide frequent reinforcement.

SPECIFIC BEHAVIORS	INTERVENTION STRATEGY/ACCOMMODATION
The student bothers others while working.	
The student has difficulty with any task that requires memory. The student has difficulty following a plan. The student displays poor handwriting skills. The student has difficulty with fluent handwriting. The student has difficulty deciphering his or her own notes.	• Assist student in setting long-range goals. • Have the student set clear time lines. • Combine seeing, saying, writing, and doing in lesson plans. • Allow the student to select shorter writing assignments. • Consider alternative methods for student responses (video recording, tape recorder etc.) • Allow for a scribe or the use of a computer or word processor. • Consider providing an outline for the student to take notes on. • Consider having a peer or buddy note-taker.

BEHAVIORAL MODIFICATIONS AT HOME AND IN SCHOOL

Children who exhibit behaviors associated with ADHD, whether diagnosed or not, require a structured classroom where behavioral and academic expectations are clearly established. Some general strategies which can greatly prevent or reduce behavioral problems involve the areas of rules, reinforcement, known consequences, and keeping the student occupied with a desired activity.

Rules

Develop a few rules which are clearly stated and posted around the classroom. Spend time with the students reviewing the rules and explaining their rationale. Share this list of rules with parents.

Positive Reinforcement

Building a student's self esteem can be a most powerful behavioral management strategy. Positively reinforcing a student bolsters his/her sense of self esteem. Positive reinforcement can range from verbal praise to more tangible rewards such as stickers, candy, prizes, etc.

Clear Consequences

Establish clear consequences for following rules and consistently impose those stated consequences.

Busy hands

Behavioral problems typically occur during times in which the students are not actively occupied. Adequate planning and the use of intriguing activities are often effective deterrents to problem behavior. Frequently, transition or non-instructional times are the most challenging for students with ADHD. They usually have a difficult time waiting in the lunch line, riding the bus, or switching from one class activity to another. Students need to be prepared for changes in routines and reinforced for appropriate behavior.

More formalized behavioral management strategies have frequently been ultilized in the classroom to improve a student's impulse control, self-discipline skills, and organizational skills. The goals of behavior management are to increase desired behaviors (i.e., on-task behavior, raising a hand to speak, etc.) and to decrease inappropriate behaviors (i.e., talking out in class, roaming the classroom, etc.). It is important to remember that the removal of an inappropriate behavior will not occur unless it is replaced with an appropriate behavior. When a student lacks a particular appropriate behavior (e.g., politely requesting teacher assistance), the teacher must approach this situation as an instructional issue. That is, the student must be taught the requisite behavior.

These desired and undesired behaviors need to be well defined and the consequences for those behaviors clearly specified. The core of an effective behavioral management program is consistent follow through! Behavior management strategies may include such things as positive and negative reinforcement, behavioral contracting, a token reinforcement program, and the use of time out.

Positive and Negative Reinforcement

It has been clearly established that the provision of immediate and reinforcing positive feedback is an effective strategy. Students with ADHD who are attentive to expectations and who are provided immediate feedback for their behavior are clearly more successful in their pursuits. Praising on-task behaviors, while ignoring minor inappropriate behaviors, yields better results as opposed to constantly verbally reprimanding the off-task student. Informing the student what he or she is doing right and providing immediate praise often increases the student's motivation. Using specific praise, such as, "I like the way you have not talked while you completed your math

assignment," provides the student with "real" examples of what behaviors he or she should continue. Simply

stated, positive reinforcement is demonstrated when a behavior is followed by a consequence that increases the behavior's rate of occurrence.

Inappropriate behaviors, especially those which interfere with classroom instruction, are difficult to ignore. However, providing attention to unacceptable behaviors often increases the likelihood of its recurrence. A successful alternative involves ignoring the inappropriate behavior. The teacher will ignore the student's inappropriate behavior, but will immediately pay attention when the student exhibits appropriate behaviors. For example, the teacher ignores a student's fidgeting in his chair, but immediately reinforces the student when he/she is attentive to the task. An alternative to positive reinforcement is negative reinforcement. The goal of negative reinforcement is the same as positive reinforcement - to increase an appropriate or desirable behavior. However, with negative reinforcement, something is removed or withdrawn from the student's environment to produce the increase in the target behavior. An example of negative reinforcement is, "John, you must stay in the classroom and finish your math problems before you may join the other children at recess." In this case, the negative consequence of missing recess is removed only if John completes the desired behavior of completing his math homework.

Behavioral Contracting

A behavioral contract is a contractual agreement between the student, teacher, and parent (as warranted) that identifies target behaviors and consequences. Typically, behavioral contracts are simple and are continually reviewed. Simply stated, if the desired behavior is displayed then the reinforcement is provided. See a sample behavioral contract in **Appendix A**.

It is important to note that a behavioral contract typically does not provide immediate reinforcement. Hence, the student's age should be taken into consideration. If the student is too young, or the student's behaviors are too challenging, this type of delayed reinforcement program will not be as effective.

Token Reinforcement Programs

As we previously stated, students with ADHD tend to require more immediate and frequent rewards than non-ADHD peers. Behavioral strategies that incorporate more immediate reinforcers (e.g., tokens) can provide ADHD students with the immediate feedback required to keep them on task. Without going into great detail, a token economy is simply a reward system wherein certain targeted behaviors earn a prescribed number of points or tokens. Target behaviors are jointly identified and the student is given opportunities to earn "tokens" as a result of displaying the target behaviors. The earned tokens can then be used to buy privileges or rewards at designated time periods. Tokens may initially be exchanged on an hourly or daily basis, providing a more immediate consequence. As behavioral improvement is demonstrated, the time interval for "cashing in" tokens should be gradually increased. If used with the entire class, the list of reinforcers should be clearly posted in the classroom along with the amount of tokens needed to purchase each item. If used on an individual basis, the award and discussion of the tokens should be done in private so as to not stigmatize the student.

This token system can also be implemented in an effort to decrease problem behaviors with the addition of a cost-response system. A cost-response system causes the student to lose tokens when certain inappropriate behaviors are displayed. It is important to remember that a student should not frequently lose tokens and should gain more points than s/he loses. If an inappropriate behavior persists, a different behavior management technique should be employed.

Note: Identifying reinforcers which are continually effective takes considerable time and effort. Just because a reinforcer was effective two weeks ago does not necessarily mean it will continue to hold its appeal. Establishing any type of an effective behavioral management system takes constant monitoring and modifying of procedures and reinforcers.

SOME POSSIBLE REINFORCERS INCLUDE:

X Be first in line	X Take care of class pet	X Help your teacher correct papers
X Be a messenger	X Provide free time	X Be the teacher's assistant
X Play a game	X Work at the teacher's desk	X Time off from school
X No homework coupon	X Use computer	X Lunch with teacher/principal
X Food or treat coupons	X Attend a sports event	X Be first to lunch

Time-out

This behavioral intervention serves as a punishment by denying a student, for a fixed period of time, the opportunity to receive reinforcement. There are several forms of time-out. The most frequently used example of time-out is when a teacher temporarily removes a misbehaving student from the classroom group by having the student go to a corner of the room or sit behind a partition. Time-out is typically used when the student's inappropriate behaviors have escalated to the point where the behaviors are interfering with classroom instruction. Time-outs give the student "time away" from any type of positive reinforcement and activity. The student needs to feel like s/he is losing something of importance for this to be effective. Time-outs are intended as a punishment, however, some students may seek "time-outs" in order to escape from a classroom assignment or instruction. It is important to monitor the efficacy of timeouts.

FAMILY OR INDIVIDUAL COUNSELING

Most students with ADHD are frustrated with their inability to "fit in" and they feel isolated from their family and peers. Students with ADHD often experience anxiety about school and home expectations and their inability to achieve socially and academically may lead to depression and a feeling of loneliness. The case conference committee of a student who is eligible for special education services may determine that s/he is in need of counseling as a related service, which would be at offered at no cost to the family. Individual and family counseling can be especially helpful in building specific skills that will help the student and family adjust. Counseling can also be particularly helpful in developing and modeling needed social skills to help the student deal with social situations in a more successful manner. If the student is determined to be eligible under Section 504 low cost or sliding scale counseling services should be discussed as an option for the family.

SOCIAL SKILLS TRAINING

Students with ADHD tend to exhibit behaviors which cause them social alienation and isolation from their peers As mentioned previously, many times individuals with ADHD do not recognize verbal or non-verbal cues from others indicating that their behaviors are inappropriate. Social skills training is extremely important in order to enhance interpersonal relations among students. Most effective social skills training is based upon behavioral and social learning principles. Effective instructional methods include establishing a rationale for teaching a particular social skill, modeling, concept teaching, role playing, behavioral rehearsal, coaching, and contingent reinforcement.

COMMUNICATION AND COLLABORATION

Communication with all parents is critical. However, it is especially critical for students who require special education services. A student with ADHD frequently exhibits behavioral and academic difficulties. In these situations, parents require regular feedback on how their child is doing. This communication is frequently accomplished through the use of an assignment notebook, parent/teacher newsletters, student/parent newsletters, e:Mail, and telephone calls.

Daily/Weekly Progress Report

A progress report informs the parents of how the student performed throughout the day and provides feedback to the parent regarding specific behaviors. Teachers can also benefit from information provided by the parent. Parents and teachers can work together to implement a behavior modification system and they can both initiate rewards. For a sample progress report form see **Appendix B**.

Assignment Notebook

A 3-ring binder can serve as an assignment notebook. In the assignment notebook, the student writes the class assignment, due date, and date the assignment is turned in. An assignment notebook affords both teachers and parents a method to actively monitor the student's school work. For an example of an assignment notebook, see **Appendix C** .

Parent Support Groups

Support groups for parents dealing with behaviors associated with ADHD can provide families with much needed assistance in learning how to cope and manage "difficult" behaviors. Parents are often comforted when they learn they are not alone. Within the framework of a support group, parents are provided opportunities to "vent" their frustrations and share successes.

The following list of family support groups is not intended to be all inclusive or exhaustive.

PARENT SUPPORT GROUPS

Children with Attention Deficit Disorders (***CHADD***) is a national parent support group designed to assist parents whose children display behavioral characteristics associated with ADHD.

CHADD
8181 Professional Place, Suite 201
Landoever, MD 20785
301/306-7070
1-800-233-4050
http://www.chadd.org

Learning Disabilities Association
4156 Library Road
Pittsburg, PA 15234-1349
412/341-1515
http://www.ldanatl.org

Indiana Family Support Network
Mental Health Association
Lizabeth Jowell
55 Monument Circle, Suite700
Indianapolis, IN 46204
317/638-3501

Children with Attention Deficit Disorders - Indiana Chapters

686	Allen County CHADD	Ft. Wayne IN	219/489-4689
984	Northeast Indiana CHADD	Angola IN	219/665-1857
872	Bremen CHADD	Nappanee IN	219/773-7911
761	Central Indiana CHADD	Indianapolis IN	317/299-9858
787	Grant County CHADD	Marion IN	317/384-7429
486	Madison County CHADD	Pendleton IN	765/778-7109
917	Ohio River Valley CHADD	Madison IN	812/273-1952
665	Monroe County, IN CHADD	Bloomington IN	812/334-1524
717	Bartholomew County CHADD	Columbus IN	812/372-0783
152	Southern Indiana CHADD	Evansville IN	812/423-3222

SECTION VI

ARE MEDICATIONS AN EFFECTIVE TREATMENT FOR ADHD?

The prescription of stimulant medication is the most widely used treatment for ADHD symptomalogy, with approximately 2% of the school age population being treated with medication (Safer & Krager, 1988). The use of stimulant medication has been around since the 1930s and has grown steadily in the last decade (Safer & Krager, 1988). As with all other issues surrounding ADHD, the use of stimulant medication is highly controversial.

It is important to understand that stimulant medication does not cure ADHD. The use of medication is a viable management approach and, when administered appropriately, has been proven to be effective for approximately 70% to 80% of students with ADHD (Barkley, 1990). Short-term improvements in behavioral, academic, and social functioning in school and at home have been noted for individuals with ADHD treated with stimulant medication (DuPaul & Barkley, 1990). Yet, while the use of stimulant medication is effective for some, other treatments or intervention strategies should be explored and utilized. Stimulants alone do not improve academics. The use of stimulant medication when paired with other interventions (e.g., behavior modification) impacts greatly on behavior change and is longer lasting (Barkley, 1989). The use of stimulant medication creates an "opportunity" for the individual to concentrate, improve behaviors, and increase academic skills. However, the student still requires the skills to compensate for ADHD behaviors, and medication alone cannot instill new behavioral skills. New behavioral skills are fostered through effective behavior management interventions and social skills instruction.

Stimulant medication activates the central nervous system; stimulant medications are typically administrated orally. The three most commonly used stimulant medications to treat ADHD symptoms are methylphenidate (Ritalin), dextroamphetamine (Dexedrine), and pemoline (Cylert).

Ritalin (Methyphenidate)
The most commonly used stimulant medication, being used with over 90% of children treated with a stimulant (Safer & Krager, 1988). Ritalin usually shows an effect within 30 minutes, reaches optimal blood levels in 2 to 3 hours, and dissipates within 3-5 hours (Barkley et. al., 1993).

Dexedrine (Dextroamphetamine)
This stimulant is approximately twice as potent as Ritalin and requires half the dose. Although it is perceived to be equally effective, it is not prescribed as frequently as Ritalin. Dexedrine usually shows an effect within 30-60 minutes, reaches optimal blood levels in 1 to 2 hours, and dissipates within 4-6 hours (Dulcan, 1990).

Cylert (Pemoline)
This stimulant only requires 1 dose per day. It resembles Ritalin and Dexedrine in its effects. Its effects usually occur within 2 hours after ingestion (Pelham et al, 1990). Individuals administered Cylert must be monitored closely for adverse effects on liver functioning.

All of the previously mentioned stimulant medications have been noted for their positive effects in increasing attention and controlling impulsive responses. However, no two individuals will react the same. A failure to respond to one type of medication does not negate the possibility of a positive response to another type of

medication. If one stimulant medication is not effective, then another type should be tried.

In addition to stimulants, other kinds of medications have documented positive effects on ADHD. Tricyclic antidepressants such as desipramine and imipramine have been reported to improve activity level and attention skills (Garber, 1996). Antidepressants require more intense monitoring due to their side effects of increasing blood pressure and heart rate.

Studies have proven that the use of stimulant medication has precipitated academic improvement (although long-term effects are not conclusive) and significantly improved social relationships. It should be noted that it is not clear if the stimulant medication has a direct causal relationship to academic and social improvement or if the relationship is more indirect due to increased attention and social skills and decreased hyperactivity resulting in academic/social improvements.

Prescribing a stimulant medication should not be taken lightly and should not be an automatic response to an ADHD diagnosis (DuPaul & Stoner, 1994). Determining the need, type, and amount of stimulant medication is the primary responsibility of the physician in consultation with others. The medication decision should be made in concert with the parents, the student, and, if applicable, school personnel.

The following factors should be considered prior to recommending medication:

- *Severity of the Student's ADHD Symptoms/Behaviors.* The greater the severity, the more likely that a stimulant medication trial will be necessary.
- *Prior Use of Other Treatments.* Other intervention strategies should be explored and attempted prior to the recommendation of a stimulant medication. However, if previous interventions have been unsuccessful, medication should be considered.
- *Presence of Anxiety Disorder Symptoms*. The presence of anxiety disorders needs to be considered prior to the prescription of any medication.
- *Parental Attitude Toward the Use of Medication.* In order for parents to support the use of medication, they need to be provided with literature that describes the effects and side effects. Parents need to make their own decisions and should not be pushed into a medication decision.
- *Adequacy of Adult Supervision*. Family and school personnel need to supervise the administration of medication, monitor for its effectiveness, and provide feedback to the physician. This is an investment of time for both parties, and this commitment must be secured prior to initiating the administration of medication.
- *Student's Attitude Toward Medication*. The student has a stake in this decision. The use of medication will affect his or her life, and securing the student's support and commitment is critical to a successful medication treatment.

(Adapted from Barkley, 1990)

Monitoring the effectiveness of medication and potential side effects is an essential aspect of medication therapy. It is extremely important for any student taking medication to be monitored closely by a physician. The parents, student, and teachers all need to provide feedback on the medication's effectiveness and any associated side effects. Constant communication and coordination are fundamental to tracking the student's progress or lack thereof.

Whether or not stimulant medication is used, it is important that other intervention strategies are employed in order to maximize success. Many alternative interventions should be tried before a decision is made to use medication.

Stimulant medication and behavioral modification strategies are the two most commonly used interventions for ADHD (Barkley, 1990).

If a student shows signs of improvement after being prescribed a stimulant medication, does that mean the student definitely is ADHD?

No. This is a common myth. While the use of stimulant medication can show positive results for students with ADHD, the use can also show positive results (approximately 25%) for individuals who are not ADHD (Rapport, Buchsbaum, Weingartner, Zahn, Ludlow, & Mikkelsen, 1987). Any time a medication is prescribed, the student should be observed for its effects (positive or negative) and any associated side effects.

Aren't there extreme side effects associated with the use of stimulant medication?

Side effects are common with all medications. However, if medication is prescribed appropriately and effectively monitored, all side effects should be under control. The four most common short-term side effects are: appetite reduction, sleep difficulties, stomach pains, and irritability (Gittelmann & Kanner, 1986). Generally, short-term side effects decrease or disappear one or two months after the medications are initiated.

A less common side effect, but more serious, is the development or heightening of a tic disorder. Although the development of a tic disorder is considerably low (1%), the use of stimulant medication has been proven to heighten a pre-existing tic disorder (13%) [Barkley, 1989]. Typically, the termination of the stimulant medication diminishes the tics, however, a few studies have indicated that once the medication was stopped the frequency and severity did not subside.

Other potential long-term side effects include drug addiction, depression, or emotional difficulties, however, these are not supported by research.

How is the medication dosage determined?

A long standing myth is that the medication dosage is determined purely by a person's size (weight and height). This is not the case. There is no magical dosage that works for all children and adults. Ritalin is usually prescribed in 2.5 mg increments, with an individual dose beginning at 5.0 mg. (Garber, 1996). The appropriate dosage is primarily determined by the physician based on feedback provided by the team - the parents, student, teachers, and therapists.

Do stimulant medications that treat ADHD lose their effectiveness when a child reaches puberty?

No, stimulant medications are not known to become ineffective after puberty. However, the amount of medication required to manage the ADHD symptoms may change. Changes in the ADHD symptoms, the individual's body size, and metabolism rate all affect stimulant medication effectiveness.

SECTION VII

WHAT DOES THE FUTURE HOLD FOR ADHD?

Although there has been considerable progress in the field of ADHD, it is clear that the area of ADHD is plagued with controversy. Significant work remains to be completed in several areas to fully understand the disorder and to identify effective treatment or intervention strategies.

While genetic research provides evidence that ADHD is biologically based, future genetic research is warranted in order to specifically identify which genes affect or contribute to ADHD symptoms. Increasing our understanding of the genetic impact on ADHD symptoms may assist in effectively diagnosing and treating ADHD symptomalogy. More information is required regarding the etiology of ADHD and the treatment association. Gaining a greater understanding of the genetic composition would also assist in the early identification of children at risk of developing ADHD behavioral characteristics. With early identification, preventative treatments and early intervention services could be employed.

It is important to note that purely understanding the genetic composition will not always successfully determine how the disorder will be manifested. As previously discussed, the symptoms of ADHD vary in their manifestation from individual to individual and may vary as the individual matures. Further information is required on the variety of behavioral interventions to be utilized. Some behavioral techniques may be more effective and appropriate in certain situations or environments (Reif, 1993). Likewise, certain behavioral intervention strategies may be more effective with certain age groups. A better developmental understanding of the disorder and effective intervention strategies would enhance treatment success. In addition, treatment of co-existing disorders may require different intervention strategies when compared to individuals with only ADHD symptoms. Additional research is required to devise assessment instruments which are successful in differentiating ADHD from other conditions or identifying co-existing conditions.

Further medication research in the use of stimulant medication to treat ADHD is warranted. Determining why some medications work for some and not others and how stimulant medications affect the individual physiologically, is an important step to treating the disorder. The medical and educational fields need information on which medications improve or worsen specific behaviors associated with the disorder.

The best prospect for enhancing the educational and life opportunities for individuals with ADHD rests with efforts to increase the understanding of this disorder by all affected individuals. Educators and families require instruction in how to meet the educational and behavioral needs of students with ADHD. Increasing the amount of training regarding ADHD would provide the student, family, and educators with the tools necessary to more effectively treat the behaviors associated with ADHD.

SECTION VIII

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SECTION IX

Appendices

Behavioral Contract

You will get a point for every time you:

School: Home:

_____ _____

_____ _____

_____ _____

If you misbehave, then you will:

_____

_____

_____

_____

When you get _____ points, you can:

T_____ **T**_____

T_____ **T**_____

T_____ **T**_____

Student Signature: _____

Teacher Signature: _____

Parent(s) Signature: _____

Principal Signature: _____

Appendix B

Daily/Weekly Progress Report Form

Name: _____ Week of: _____

How did I do today?

0 = Unsatisfactory **1 = Fair** **2 = Good** **3 = Excellent**

Behavior	Mon.	Tues.	Wed.	Thurs.	Fri.
Prepared for class (book, pencil, paper)					
Paid attention					
Handed in homework					
Followed directions					
Got along with others					

Teacher Comments: (Explain what the student did well; improvements needed)

_____

_____

_____

Parent Comments: (Identify reinforcements and consequences for this report; Report on student behavior at home)

_____

_____

Appendix C

Daily Assignments

Name: _____ Week of: _____

Date	Class	Assignment	Teacher Initial Assignment	Parent Initial Acknowledgment	Teacher Initial Turned In

Comments: _____

_____

_____